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No.	Name.	Mag.	R.A. 1900.			Ann. var.	Decl. 1900.		Ann. var.	Remarks.
			h	m	s	s	°	′	′	
461	γ Tucanæ	4	23	11	36	+3·5	−58	47·0	+0·33	
462	γ Sculptoris	4–5		13	25	3·2	33	4·7	0·32	
463	Sculptoris, 11 G.	6		15	56	3·2	27	32·0	0·33	
464	98 b^1 Aquarii	4–5		17	44	3·1	20	38·7	0·33	
465	o Gruis	6–5		21	1	3·4	53	16·6	0·33	
466	Tucanæ, 33 G.	6		23	14	3·5	63	39·7	0·33	
467	Octantis, 83 G.	6		25	52	4·0	77	56·3	0·33	
468	β Sculptoris	5		27	37	3·2	38	22·2	0·33	
469	101 b^3 Aquarii	5–4		28	3	3·1	21	28·0	0·33	
470	ι Phœnicis	4–5		29	42	3·2	43	10·0	0·33	
471	Phœnicis, 11 G.	4–5		32	28	3·2	46	2·7	0·33	
472	μ Sculptoris	5–6		35	23	3·2	32	37·6	0·33	
473	Tucanæ, 35 G.	6–7		38	41	3·5	71	2·9	0·33	
474	σ Phœnicis	5		41	57	3·2	50	46·9	0·33	
475	δ Sculptoris	5–4		43	43	3·1	28	41·0	0·33	
476	Aquarii, 274 G.	6–7		48	11	3·1	24	47·1	0·33	
477	π Phœnicis	5		53	44	3·1	53	18·3	0·33	
478	ϵ Tucanæ	4–5		54	43	3·2	66	8·0	0·33	
479	θ Octantis	5–6		56	29	3·2	77	37·0	0·33	
480	Tucanæ, 45 G.	6		59	37	+3·1	−71	59·6	+0·33	

Measures of Southern Double Stars, made at the Observatory, Sydney, New South Wales.

(*Communicated by H. C. Russell, B.A., F.R.S.*)

The following are measures of interesting southern double stars made at Sydney Observatory during 1886 with two measures of *α Centauri* in 1884. With a view of testing the measures of position-angles several measures of *α Centauri* have been made. Taking $\triangle\alpha$ and $\triangle\delta$, it will be seen that the results obtained in this way by Mr. Pollock are rather less than his direct measures, but he thinks his direct measures are more reliable. There is some discrepancy in the measures of *h* 5028, the large star of which Burnham discovered to be double (B 759), and *β* makes the distance of the wide pair 34″·81. Herschel gives two measures with his reflector distances, 20″ and 15″, and the Sydney measure in 1886 is 15″·27.

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Results of Measures of α *Centauri, Sydney Observatory,* 1884 *and* 1886.

Star.	R.A. 1886·0. h m s	Decl. 1886·0.	Pos. Angle.	Dist.	Mags.	Date.	Observer.	Instrument.	
α Centauri	14 31 52	−60 21 46	199°·0	11″·96	1–1½	1884·194	R.	11½	
			202·7	14·78		86·296	P.	7¼	
			202·9	15·02		86·301	P.	7¼	Definition bad.
			202·7	15·09		86·320	P.	7¼	Stars very blazy.
			202·3	14 73		86·326	P.	7¼	Stars very blazy.
			200·4	14·74		86·378	R.	11½	
			201·9	14·84		86·378	P.	11½	
			201·2	15·19		86·520	R.	11½	
			201·9	15·37		86·526	P.	7¼	Definition very unsteady.
			202·3	14·70		86·534	P.	7¼	Definition awful.
			202·6	15·06		86·548	P.	7¼	4 o'clock P.M.
			202 2	15·15		86·550	P.	7¼	2.30 P.M., stars dancing.
			202·7	—		86·550	P.	7¼	4.30 P.M., stars very steady.
			202·7	14·96		86·553	P.	7¼	Pos. angle satisfactory.
			203·1	15·25		86·567	P.	7¼	
			202·2	15·21		86·570	P.	7¼	
			202 6	15·00		86·583	P.	7¼	Definition very steady.
			202·5	14·96		86·594	P.	7¼	
			202·1	15·63		86·602	P.	7¼	Definition good.

	Observer.	Epoch.	Pos. Angle.	Dist.	No. of Meas.
Mean	R.	1886·449	200°·80	14″·97	2
	P.	1886·487	202·46	15·05	16

Resulting Position-angles and Distances of α Centauri obtained from Measures Δα and Δδ, Sydney Observatory, 1884 and 1886.

Pos. Angle.	Distance.	Date.	Observer.	Instrument.
°	″			
199·5	12·32	1884·433	R.	11½
200·7	14·68	86·526	P.	7¼
200·9	14·82	86·548	P.	7¼
201·8	14·78	86·550	P.	7¼
200·7	15·19	86·567	P.	7¼

	Observer.	Epoch.	Pos. Angle.	Dist.	No. of Meas.
			°	″	
Mean...	P.	1886·548	201·02	14·87	4

Measures of some Southern Binaries and Double Stars showing signs of Motion, made at Sydney Observatory during the year 1886.

Star.	R.A. 1886·0.	Dec. 1886·0.	Pos. Angle.	Dist.	Mags.	Date.	Obs.	Instr.	
	h m s	° ′ ″	°	″					
ρ Eridani	1 35 28	−56 46 27	229·9	6·63	6–6	1886·901	P.	11½	Definition very bad.
			230·8	6·85	,,	86·909	P.	11½	Definition good.
β Muscæ	12 39 18	−67 29 2	322·0	0·79	3·5–4	86·501	R.	11½	Discovered double by Russell 78·284.
			325·8	0·5 est.	,,	86·594	P.	7¼	
			323·7	—	,,	86·597	P.	7¼	Previous measure— R 80·344 Pos. 317°·3 Dist. 0″·54
π Lupi	14 57 22	−46 36 15	91·1	0·87	5–5	86·550	P.	7¼	Previous measures— *h* 1836·11 Pos. 111°·1 Dist. 0″·75 R 1872·422 ,, 100°·1 ,, 0″·57 R 1880·444 ,, 99°·3 ,, 0″·90
			89·8	0·8 est.	—	86·597	P.	7¼	

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Star.	R.A. 1886·0. h m s	Dec. 1886·0. ° ′ ″	Pos. Angle. °	Dist. ″	Mags.	Date.	Obs.	Instr.	
h 5027	18 3 0	−54 25 0	95·2	12·90	9–10	86·597	P.	7¼	Previous measures— *h* 1834·518 Pos. 59°·2 Dist. 15″ est. R 71·548 „ 84°·7 Dist. 12″·98 H (Sydney) 81·706 Pos. 91°·9 Dist. 11″·42
h 5078	18 54 0	45 49 0	212·3	18·88	9–10	86·597	P.	7¼	A and B } Large star discovered double by Russell 81·716. Previous measure— R 81·716 Pos. 287°·3 Dist. 1″·00
			275·3	1·80	9–10	86·597	P.	7¼	A and C
ζ Sagittarii	18 55 21	−30 2 30	271·0	—	3·5–4	86·739	P.	11½	Elongated with 800 and 1200, but not divided; smaller end goes first. The star appears pear-shaped. Measures made with 800 power, 9-in. aperture; definition first rate. Looked at on (5) nights, but above was only night it could be measured. Est. dist. less than ½″. For previous measures see a paper by Mr. Gore, *Monthly Notices*, vol. xlvi. 8.
γ Coronæ austr.	18 58 43	−37 13 33	199·6	1·70	5–5	86·567	P.	7¼	Measures difficult; dist. not satisfactory.
			200·5	1·40		86·570	P.	7¼	
			199·9	1·11		86·572	P.	7¼	Cloudy; dist. not reliable.
			200·5	1·35		86·591	P.	7¼	
			200·9	1·06		86·597	P.	7¼	Distance not satisfactory.
			200·6	1·64		86·613	P.	7¼	
			203·5	1·52		86·704	R.	11½	
			201·3	1·74		86·704	P.	11½	
			201·4	1·63		86·706	P.	11½	
Mean	... ...	... ...	200·59	1·45		1886·615	P		8 measures.
γ Lupi	15 27 0	40 47 0	Looked at on several nights; not divided with highest powers; seems elongated in direction of motion.						

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Measures of some Southern Double Stars discovered by Burnham at Mount Hamilton in 1879. Made at Sydney Observatory during the year 1886.

Star.	R.A. 1886·0.	Decl. 1886·0.	Pos. Angle.	Dist.	Mags.	Date.	Obs.	Instr.	
	h m s	° ′	°	″					
β 755	6 31 26	−36 41	252·3	0·88	6–7	1887·227	P.	11½	A and B.
			253·0	0·67		87·246	P.	11½	A and B dist. much too small; estimated 1″·0.
			302·0	21·22	6–12	87·246	P.	11½	A and C. β at Mount Hamilton 1879: A and B 250° ± 1″·0 ±. A and C 300° ± 12″·0 ±
β 757	7 8 23	−36 21	67·7	2·57	6–9	87·227	P.	11½	A pretty double, but much wider than B makes it; est. dist. = 3″·0 ±. β at Mount Hamilton, 1879: 60° ± 1″·5 ±.
β 759	18 4 19	−36 48	121·7	2·17	9–9·5	86·605	P.	7¼	A and B } β at Mount Hamilton: A and B 118°·1 1″·20 /79·681. A and C 149°·2 34″·81 /79·681.
h 5028			148·7	15·27	9–9	86·605	P.	7¼	A and C } Dist. of A and C Sydney readings of micro. screw /86·605 are Revs. 24·713 26·123 24·726 26·113 26·1180 24·7195 1·3985 = double dist. 0·6993 = dist. Coincidence found by direct measures 25·422. Value of screw = 21″·835 ∴ dist. = 15″·27.
β 760	18 9 55	−36 48	99·5	4·36	3–11	86·712	P.	11½	A fine double with a distant companion, 10 mag. about 300° ±. Mean of β's measures is: Pos. 99°·9 Dist. 2″·85 1879·676.
β 761	19 31 49	−40 0	198·7	2·55	7–11	86·712	P.	11½	Mean of β's measures is: Pos. 197°·4, Dist. 1″·92 1879·684.
β 763	20 16 8	−42 50	31·0 est.	0·7	7–8	86·605	P.	7¼	β's measures are: Pos. 28°·6 Dist. 1″·23 1879·687. 19°·9 1″·25 79·753.
β 766	21 17 9	−41 30	302·0 est.	0·5	6–7	86·706	P.	11½	Definition very bad. Mean of β's measures is: Pos. 314°·2 Dist. 0″·84 /79·727.
β 768	21 48 55	−37 51				86·605	R.	11½	A large star following γ Gruis examined with 800 and 1200, not divided, though it seems elongated in direction of motion; angle 90° ±. Only thought double by β.
β 767	21 19 48	−43 3	146·3	3·47	6–9	86·602	P.	7¼	Mean of β's measures are: Pos. 146°·1 Dist. 4″·05 /79·709.

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Observations of the Companion of Sirius made at the Dearborn Observatory, Chicago, U.S.A. By Prof. G. W. Hough, Director.

(*Communicated by the Secretaries.*)

Date.	Sid. Time.	*p.*	*s.*	Remarks.
	h	°	″	
1887·118	5·9	24·7	—	High winds. Unsteady.
·148	6·6	24·4	6·90	Difficult.
·186	7·5	23·7	clouded	Comp. plain.
·211	7·2	23·7	6·80	Difficult.
·217	7·5	23·2	6·77	Comp. plain. Vis. with 925 power.
·236	8·0	23·1	6·65	Difficult. Clouds passing.
·249	7·8	23·3	6·77	Difficult. Hazy.

Mean Results.

1887·195		23·7	6·78

During the past spring the weather here has been very unfavourable. It is the first year that I have found any difficulty in securing observations of *Sirius* on as many nights as was desirable. The decrease in the distance, however, makes the observation of this pair more difficult every year, and hence requires better atmospheric conditions than formerly.

On the Orbit of Σ 1757. By J. E. Gore.

A reference to my paper on the orbit of this binary star in the *Monthly Notices* for November 1886 will show that the comparison between the measures of position angles in recent years and the angles computed from the elements there given is not satisfactory. I have re-computed the orbit, using recent measures kindly made for me by Mr. Tarrant and Prof. Young (U.S.A.), and now find the following elements:—

Second Elements of Σ 1757.

$P = 276·92$ years

$T = 1791·98$ A.D.

$e = 0·4498$

$\gamma = 40° \ 56'$

$☊ = 87° \ 36'$

$\lambda = 185° \ 23'$

$a = 2·05''$

$\mu = +1·30°$

The following is a comparison between the observations and the positions computed from the above elements:—